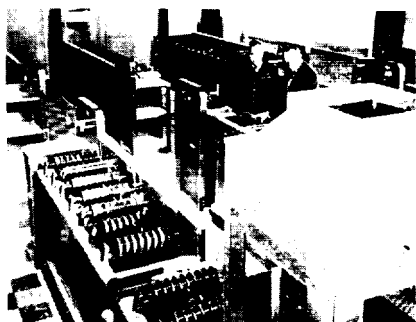
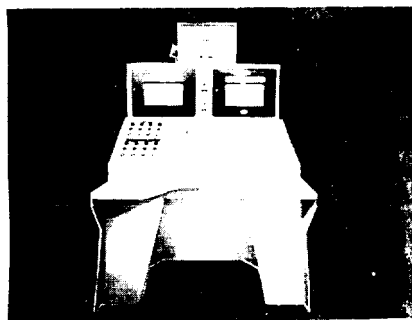


RIGHT: You're not looking at the interior of a brewery, but rather the heart of Cape Canaveral's center for color motion picture processing.



OVERALL VIEW of Heister Fearless motion picture processing machines.



PROCESSING chemical control console.



Heister Fearless motion picture processing facility.

TOMORROW'S LAB TODAY

It seems only proper that Cape Canaveral, America's kickoff point to the future, should be serviced by one of the world's most advanced motion picture labs.

by JAMES HUGHES
Executive Editor

In this age of supersonic long-range missiles, documentary movies have become important tools for U. S. Air Force Air Research and Development Command scientists.

As permanent records of major missile firings, they are used by scientists to evaluate the results of tests and to compare them with the results of previous firings. When a missile misfires, they frequently enable scientists

to pinpoint the area or sequence of error.

In keeping with the importance of photography to its mission, the Air Force Missile Test Center, Patrick Air Force Base, Cape Canaveral, Florida, recently began processing film in one of the largest and most versatile film processing laboratories in the world. The \$1.4 million facility can process black-and-white and color film—16, 35 and 9mm.

Eleven processing machines,

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32 Declass Review by NIMA / DoD

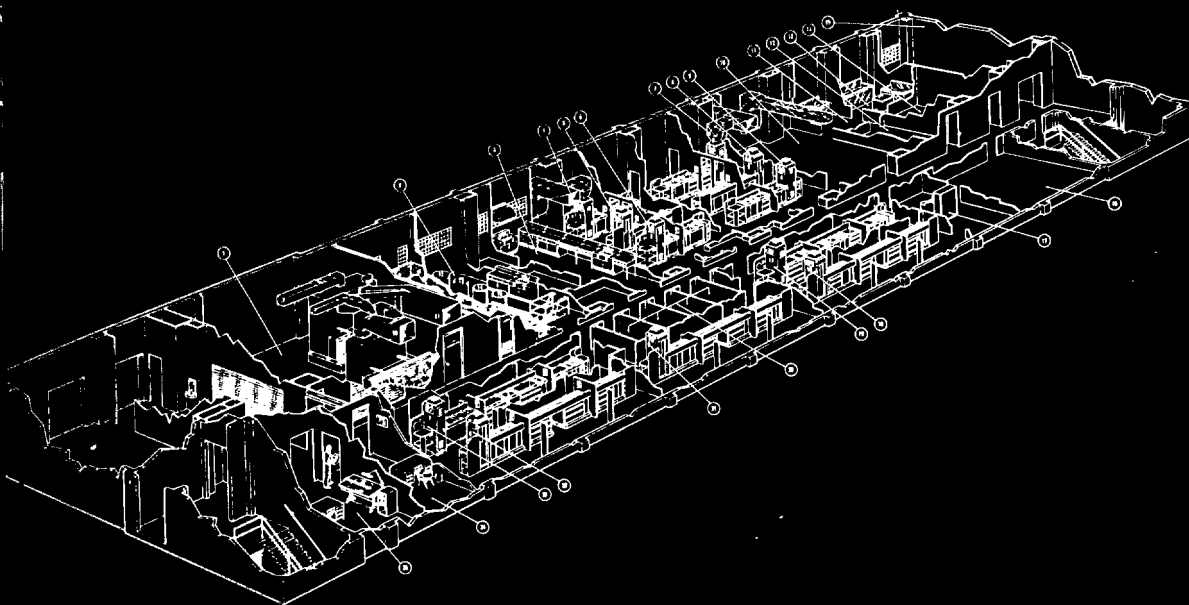


FIGURE 2: LAYOUT of motion picture processing laboratory, Patrick Air Force Base. 1: Micron air filters and air handling units. 2: Chemical analysis room. 3: 16-35 mm b&w hi-contrast negative machines. 4 & 5: 16-35 mm b&w low contrast negative machines. 6: 16-35 mm b&w positive machine. 7 & 8: 35-70 mm b&w hi-contrast negative machines. 9: 16-35 mm b&w positive machine. 10: Wide film room. 11 & 13: Wide film dark rooms. 12, 14, 24, & 25: Offices. 15: Chemical storage room. 16: Locker room. 17: Chemical control console. 18: 16-35 mm color negative machine. 19: 16-35 mm color positive machine. 20: Makeup dark rooms. 21: 35-70 mm rev. machine. 22: 16-35 mm color rev. machine. 23: 35-70 mm color rev. machine.

compared with four in former facilities, enable the processing of film much more rapidly than in the past. In addition, the new plant provides complete control over contamination by an elaborate air and water decontamination system.

"This is one of the first military labs built in an operational area designed to process film to commercially acceptable standards," notes W. F. Bischof, Radio Corporation of America production processing manager and installation project representative. "This was a complex job because of the air and dirt problems that exist here," he added. RCA functions as a sub contractor to Pan American World Airways, which is responsible for the operation of the various stations of the missile test range, including the launching site at Cape Canaveral.

To clean the water used in

processing, all solid material particles larger than two microns — a pencil dot is about the same size as 50 microns — are filtered by diatomaceous earth filters. Mechanical filters in two separate airconditioning systems remove all airborne particles larger than five microns.

E. B. Brady, RCA engineer who coordinated the building alterations and machine installation with the close cooperation of Major R. L. Jarman, USAF, ALMTC installation project officer, lists some facts and figures to give an idea of the complexity of the machinery.

"Five miles of chemical piping, 800 valves and 150 pumps transport more than 10,000 gallons of varied solutions from the basement to the processing machines on the first floor," Brady said. "At the same time, used chemicals from the machines are

drained to the tanks below for filtering and replenishment. Each pipe bears a color-coded marker with directional arrows showing flow, source and discharge tanks."

Thermostatic controls hold the large volume of solutions within a quarter of a degree of 70 degrees F., well within the tolerances allowable in processing motion picture film. The chilled water machinery that cools the basement recirculating tanks could make 40 tons of ice daily.

One of the several unusual features in the machinery is the impingement-type dryer, which blows a high-velocity jet of hot air on the film at the rate of 3,000 cubic feet per minute as the wet film leaves the final wash stage. This dries the film so rapidly that it is ready for use in less than one minute after leaving the wash.

continued on page 68

NEW and VERSATILE

FILM ANALYZER FOR PHOTOGRAPHIC DATA REDUCTION

16mm, 35mm & 70mm film all in one unit

[illegible]

- **Acetylcholine (ACh)** is the neurotransmitter released from the presynaptic terminal and binds to the ACh receptors on the postsynaptic cell.
- **ACh** binds to **nicotinic ACh receptors** and **muscarinic ACh receptors** on the postsynaptic cell, causing the release of calcium from the sarcoplasmic reticulum.
- **Calcium** then binds to **calmodulin**, which activates **myosin** and **actin** to cause contraction.
- **Calcium** also binds to **troponin**, which activates **myosin** and **actin** to cause contraction.

CONSULT VANGUARD ON DATA REDUCTION EQUIPMENT FOR . . .

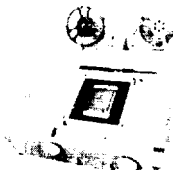


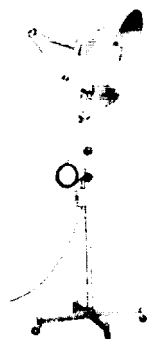
Figure 1. *Phylogenetic tree of the 16S rDNA sequences of the 16 isolates of *Brachycauda* spp. The scale bar represents 0.01 substitutions per site. The numbers at the nodes indicate the bootstrap values. The scale bar represents 0.01 substitutions per site. The numbers at the nodes indicate the bootstrap values.*

VANGUARD INSTRUMENT CORPORATION

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West of Mississippi-Triad Corp, Encino, California

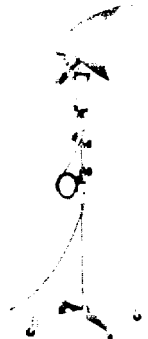
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RUGGED VERSATILE PHOTOGENIC
modeling, spots, and floods



STUDIO MODELING LIGHT

As a consequence, the use of the *in vitro* model system, although useful, is not sufficient to establish the safety of a food additive. The *in vivo* model system is required to determine the safety of a food additive. The *in vivo* model system is a more complex system than the *in vitro* model system. It involves the use of animals, which are exposed to the food additive in question. The animals are then monitored for any adverse effects. The *in vivo* model system is a more realistic model than the *in vitro* model system. It allows for the study of the effects of a food additive on the whole organism, rather than just on individual cells or tissues. The *in vivo* model system is also more expensive than the *in vitro* model system. It requires the use of animals, which are often expensive to maintain. It also requires the use of specialized equipment and personnel. Despite these drawbacks, the *in vivo* model system is still the most reliable way to determine the safety of a food additive. It provides a more complete picture of the effects of a food additive on the whole organism than the *in vitro* model system can provide.

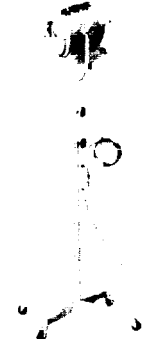


CP-15 MAZDA
FLOODLIGHT

A. *Agave americana* L. (all parts of plant)
poisoned water lilies (all parts of plant)
water hyacinth (all parts of plant)
lily pads

B. *Bluebonnet* (all parts of plant)
hillsides (all parts of plant)
lily pads

C. *Bluebonnet* (all parts of plant)



F-750 VARIBEAM
SPOTLIGHT

[illegible]

Circle No. 587 on Post Card

TOMORROW'S LAB

"continued from page 51"

Another time and moneysaving step is the rejuvenation of color film bleach—one of the most expensive processing solutions. Normally this bleach is used and dumped. At Canaveral it is rejuvenated and used indefinitely.

The machinery designed, built and installed by the Houston Fearless Corporation can be altered to permit change-overs to other processing systems, should they be required. In many instances, duplication of material has been avoided by using one common solution in several machines.

G. M. Powers, manager, RCA photographic laboratory, emphasizes that performance, not size, is the significant feature of the new installation.

He sums up the purpose of the machinery in these words: "Of course the new processing machinery increases our efficiency per man-hour expended, which is highly desirable. Even more important, however, is that we will now be able to give more dependable and somewhat faster service to civilian contractors and military agencies testing missiles on the Atlantic Missile Range."

ELECTRONIC FLASH

[illegible]

ply, our exposure depends on the total light. Therefore, we add the element of time and get such terms as *Beam Candle Power Seconds* (BCPS). This is the term we use for rating electronic flash units. This gives the strength of the light on the beam of the reflector. For instance, 2000 BCPS is the strength of the light on the beam and is equal to a light source of 2000 candle power acting for one second. For those so inclined, at